



POLIOMYELITIS SURVEILLANCE REPORT

FOR ADMINISTRATIVE USE

REPORT NO. 225

June 16, 1961

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SPECIAL NOTE

This report is intended for the information and administrative use of those involved in the investigation and control of poliomyelitis and polio-like diseases. It presents a summary of provisional information reported to CDC from State Health Departments, Virology Laboratories, Epidemic Intelligence Service Officers, and other pertinent sources. Since much of the information is preliminary in nature, confirmation and final interpretation should be determined in consultation with the original investigators prior to any further use of the material.

SUMMARY

During the 23rd week ending June 10, 1961, a total of 10 cases, 5 paralytic, was reported to CDC.

An ominous concentration of cases in Atlanta, Georgia, has been noted. In Louisville, Kentucky, three cases, not yet reflected in the weekly telegraphic report, have occurred. Current reports are presented from Georgia and Kentucky with additional salient comments on the oral polio vaccine project in Atlanta included.

A preliminary report of virus isolations reported to PSU during 1960 appears in Section 3.

In addition, summary data of the 1960 New Jersey aseptic meningitis and Canadian poliomyelitis experiences are presented in Section 5.

1. CURRENT POLIOMYELITIS MORBIDITY TRENDS

A total of 10 cases, 5 paralytic, was reported during the 23rd week ending June 10, 1961, continuing the low weekly incidence noted in Figure 1. Texas reported 3 scattered nonparalytic cases, and California accounted for 2 paralytic cases in Alameda County, one of the San Francisco Bay area counties. Single case reports were received from Iowa, Missouri, West Virginia, South Carolina, and Georgia, as shown in Table I.

These cases bring the yearly total to 194, 126 paralytic, as shown below:

POLIO (CUMULATED WEEKLY) THROUGH THE 23rd WEEK FOR PAST FIVE YEARS

	<u>1961</u>	<u>1960</u>	<u>1959</u>	<u>1958</u>	<u>1957</u>
Paralytic	126	253	458	234	497
Total	194	350	652	454	1048

These figures are the lowest in recent years as indicated.

No new outbreaks have been reported, but preliminary notification of a disconcerting concentration of poliomyelitis in Atlanta, Georgia, has been received.

2. REPORTS

A. Georgia

The continued occurrence of paralytic poliomyelitis in Atlanta has been of increasing concern. Preliminary notification of 2 additional cases was received during the past week, bringing the 1961 total in Atlanta to 6 cases, 4 paralytic. These cases have not all been accounted for in the Weekly Morbidity and Mortality Report as yet.

According to Dr. W. J. Murphy, Director, Epidemiology Service, Georgia Department of Public Health, the cases have been concentrated in the southeast and southwest sections of the city within a 2-mile radius. A preliminary listing is presented below.

<u>Age</u>	<u>Race</u>	<u>Sex</u>	<u>Onset</u>	<u>Paralytic Status</u>	<u>Vaccination History</u>	<u>Laboratory Results</u>
26	W	M	3/23	P	OV	4-fold titer rise to Type III
3	N	F	5/6	P	2V	Type I vaccine strain
3	N	F	5/27	P	OV	Type III
3	N	M	5/28	NP	OV	Unidentified virus
1 mo.	N	F	6/9	NP	OV	Under study
2	N	F	6/12	P	OV	Under study

Five of the 6 cases have involved Negro preschool-age children. All but one of the cases are unvaccinated. Poliovirus Type III has been implicated in 2 cases, and a Type I oral poliovirus vaccine strain has been isolated from one case. This latter patient, however, was fed vaccine inadvertently 5 days after the onset of her illness.

Because of the interpretational difficulties encountered when poliomyelitis occurs during an oral polio vaccine project, pertinent comments about these cases are presented below by Dr. Henry M. Gelfand, who is directing this project in collaboration with the Fulton County Health Department.

B. Notes on Polio in Atlanta

The following comments on current poliomyelitis in Atlanta, Georgia, have been received from Dr. Henry M. Gelfand, Chief, Enterovirus Unit, CDC.

"Evidence of the sporadic occurrence of poliovirus Type III in Atlanta early in March 1961 was found by isolation of one strain from 100 random rectal swabs collected from healthy young children at that time. The continuing study of rectal swabs, stools, and sewage specimens, collected early in May, just prior to the administration of oral polio vaccine in a limited community study (see PSU reports #223 and #224) indicates that Type III infection was prevalent in Atlanta at that time, although typing of all isolates has not yet been completed.

"The second case in the current Atlanta series is of very great interest and significance. This patient, living in the community included in the vaccine study, became acutely ill, with fever of 102°, on May 6. Fever continued through May 8, on which date she was unable to walk unassisted because of weakness and pain in both legs, but most marked on the left. By May 9, patient was afebrile and felt well except for leg involvement, and mother states definitely that there was no further progression in the paralysis after this date. Community vaccination with Type I oral vaccine began on May 8, and, by error, the patient received vaccine on May 11. Diagnosis of poliomyelitis was made on May 19 at a routine hospital visit, and a series of specimens was collected thereafter. Type I poliovirus was isolated repeatedly from both throat and fecal specimens. Three of these strains have been examined by the Wecker intratypic serodifferentiation test, and they clearly resemble the vaccine virus antigenically.

"Our tentative interpretation is that the etiologic agent causing the illness was probably poliovirus Type III which was supplanted by the vaccine strain Type I. Had the history of illness preceding vaccination not been so definite, false etiologic association of the vaccine virus and the illness would have been suggested. Serologic study may or may not be helpful and is underway. Attempts to isolate a second virus type have been unsuccessful but are continuing."

C. Kentucky

Mr. Clifford Todd, State Epidemiologist, Kentucky Department of Health, reports the occurrence of three cases of poliomyelitis in Louisville since April 1. These cases, not yet accounted for in the CDC Weekly Morbidity and Mortality Report, emphasize the applicability of the Babies and Breadwinners Vaccination Campaigns. The two most recent cases, a 10-month old infant and a 34-year old male, both paralytic, experienced their onsets during the first week of May. Both were unvaccinated. The initial Louisville case, a 19-year old female, occurred on April 1 and is unspecified as to paralytic status.

A previous paralytic case on January 5, 1961, in Meade County brings the Kentucky total of cases with 1961 onset to four. Vaccination programs are now underway in Louisville.

3. VIRUS ISOLATIONS REPORTED TO PSU - 1960 (PRELIMINARY REPORT)

Reports of attempted virus isolation on 1,530 poliomyelitis cases with onset during the year 1960 have been received by the Poliomyelitis Surveillance Unit through March 1. This represents virologic study on 46.3 percent of the cases reported to PSU. A number of additional reports have since been received and will be included in a forthcoming final analysis.

Poliovirus was isolated from 1,054 cases or 69 percent of the specimens submitted. Of those with virus type specified, 772 (73.7%) were Type I and

274 (26.1%) were Type III poliovirus. Type II was isolated in only two cases. These data are presented in Table 3A in accordance with the 60-day follow-up classification of cases. Only 3.4 percent of the specimens studied had no final classification.

Table 3A

VIRUS ISOLATIONS FROM REPORTED CASES
OF POLIOMYELITIS IN THE UNITED STATES, 1960

Final Classification	VIRUS ISOLATIONS							Total Spec.	Per- cent Polio- virus Iso- lated
	Poliovirus			Unsp.	ECHO	Cox- sackie	Neg- ative		
	I	II	III						
Nonparalytic or AsM Syndrome	93	1	34	1	8	22	103	262	49.2
Paralytic, No Residual	92	0	26	0	1	1	74	194	60.8
Paralytic, with Residual	547	1	210	5	2	8	224	997	76.5
Other Final Diagnosis	4	0	0	0	0	0	20	24	16.7
No Final Classification*	36	0	4	0	0	0	13	53	75.5
TOTAL	772	2	274	6	11	31	434	1530	68.9
Total with Known Classification	732	2	270	6	11	31	401	1453	69.5

* No 60-day report.

As would be expected, there was a greater percentage of poliovirus isolations from the cases with residual paralysis. In these cases, poliovirus was isolated in 76.5 percent (as compared to 78.4 percent in 1959). There were 2 isolations of ECHO and 8 isolations of Coxsackie virus among those cases with residual paralysis. In those paralytic cases with no residual paralysis at 60 days, poliovirus was isolated in 60.8 percent of the cases. The non-paralytic polio - aseptic meningitis syndrome group showed a poliovirus isolation in only 49.2 percent of the specimens studied.

Poliomyelitis in 1960 was again predominantly due to Type I virus in most parts of the country although there was an increased proportion due to Type III - 26 percent in 1960 compared to 10 percent in 1959. This increase in the proportion of Type III isolates may reflect a more intensive study of the Type III outbreaks. Concentrations of Type III poliovirus were experienced in Maryland, Pennsylvania and New York State with an epidemic due to Type III occurring in Baltimore. As can be seen in Table 3B, additional isolations of Type III were noted in New Jersey, Ohio, Virginia, South Carolina, Alabama, Louisiana, and Texas.

Table 3B
 POLIOMYELITIS BY STATE - 1960
 LABORATORY STUDIES AND POLIOVIRUS ISOLATIONS
 REPORTED ON PSU FORMS

State and Region	Total Cases*	Total Cases Lab Studies	Percent Studied	Poliovirus Isolations				ECHO	Coxsackie
				I	II	III	Unsp.		
UNITED STATES	3304	1530	46	772	2	274	6	11	31
NEW ENGLAND									
Maine	51	12	24	8	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	0	0	0
Vermont	17	1	6	1	0	0	0	0	0
Massachusetts	36	14	39	2	0	1	0	0	1
Rhode Island	103	57	55	56	0	0	0	0	0
Connecticut	36	28	78	18	0	4	0	0	1
MIDDLE ATLANTIC									
New York	261	192	74	120	1	31	0	3	1
New Jersey	82	78	95	51	0	9	0	2	0
Pennsylvania	157	116	74	21	0	66	0	0	0
EAST NORTH CENTRAL									
Ohio	127	78	61	29	0	18	0	1	5
Indiana	146	37	25	32	0	0	0	0	1
Illinois	164	94	57	42	0	2	0	0	4
Michigan	88	0	0	0	0	0	0	0	0
Wisconsin	43	22	51	13	0	2	0	1	1
WEST NORTH CENTRAL									
Minnesota	47	46	98	28	0	5	1	0	2
Iowa	29	5	17	5	0	0	0	0	0
Missouri	38	22	58	7	0	2	0	0	1
North Dakota	17	2	12	0	0	0	0	0	0
South Dakota	4	0	0	0	0	0	0	0	0
Nebraska	17	2	12	1	0	0	0	0	0
Kansas	22	5	23	1	0	2	0	0	0

* Cases reported to PSU as Poliomyelitis on preliminary PSU forms.

Table 3B (Continued)

State and Region	Total Cases*	Total Cases Lab Studied	Percent Studied	Poliovirus Isolations				ECHO	Cox- sackie
				I	II	III	Unsp.		
SOUTH ATLANTIC									
Delaware	1	0	0	0	0	0	0	0	0
Maryland	163	104	64	3	0	77	0	0	1
D.C.	5	3	60	0	0	1	0	0	0
Virginia	61	31	51	8	0	10	0	0	0
West Virginia	68	44	65	12	0	1	1	0	0
North Carolina	92	11	12	3	0	1	0	0	0
South Carolina	129	92	71	63	1	13	1	0	0
Georgia	29	6	21	1	0	1	0	0	1
Florida	61	16	26	10	0	2	2	0	0
EAST SOUTH CENTRAL									
Kentucky	158	85	54	63	0	0	0	0	0
Tennessee	61	30	49	18	0	2	0	0	0
Alabama	23	6	70	7	0	4	0	0	0
Mississippi	45	17	38	10	0	1	0	0	0
WEST SOUTH CENTRAL									
Arkansas	47	18	38	5	0	0	0	0	3
Louisiana	54	41	76	13	0	5	0	0	3
Oklahoma	19	4	21	0	0	0	0	0	2
Texas	182	24	13	12	0	4	0	0	1
MOUNTAIN									
Montana	21	8	38	6	0	2	0	0	0
Idaho	11	4	36	4	0	0	0	0	0
Wyoming	22	3	14	2	0	1	0	0	0
Colorado	25	7	28	3	0	0	1	0	0
New Mexico	6	0	0	0	0	0	0	0	0
Arizona	10	0	0	0	0	0	0	0	0
Utah	10	7	70	6	0	1	0	0	0
Nevada	0	0	0	0	0	0	0	0	0
PACIFIC									
Washington	50	30	60	14	0	3	0	0	1
Oregon	36	24	67	7	0	0	0	0	1
California	420	87	21	60	0	3	0	4	1
Alaska	1	0	0	0	0	0	0	0	0
Hawaii	9	7	78	7	0	0	0	0	0

* Cases reported to PSU as Poliomyelitis on preliminary PSU forms.

4. ROUTINE POLIOMYELITIS SURVEILLANCE - 1961

A. Cases With Onset Within 30 Days of Vaccination

There have been no new under-30 day cases reported to the Poliomyelitis Surveillance Unit during the last two weeks. Through June 14, 1961 only one case, which was a paralytic case but not correlated, has been reported. (See PSU Report No. 224).

B. Vaccine Distribution

The summary of current and cumulative shipments of poliomyelitis and multiple antigen vaccines is presented in Table II. Monthly shipments of poliomyelitis vaccine from 1959 through April 1961 is shown in Figure 2. It can be seen that although domestic shipments declined during April, shipments to public agencies increased.

5. 1960 SUMMARY REPORTS

A. Aseptic Meningitis in New Jersey, 1960

A total of 202 cases of aseptic meningitis was reported to the New Jersey State Department of Health during 1960. According to Dr. William J. Dougherty, M.D., Director, Division of Preventable Disease Control, these cases were associated with a number of causative agents as analyzed by age in Table 5A.

Table 5A
Aseptic Meningitis Cases
By Etiology and Age Group, New Jersey, 1960

Age Group	Etiology							Total	Per cent
	ECHO	Cox-sackie	Lepto-spira	Adeno-virus	LCM*	Mumps	Unknown Etiol.		
0-4	5	5	0	0	0	18	13	41	20.3
5-9	3	3	0	1	0	39	15	61	30.2
10-14	2	3	1	0	0	7	10	23	11.4
15-19	1	3	1	0	0	1	9	15	7.4
20+	4	6	0	0	1	14	37	62	30.7
TOTAL	15	20	2	1	1	79	84	202	100.0

*Lymphocytic Choriomeningitis

Cases were concentrated largely in children with a peak in the school age group. Coxsackie and ECHO virus infections accounted for 35 cases. Two cases of leptospirosis in young adult white males were reported, and one adenovirus infection in a 9-year old white male. Also reported was a fatality due to lymphocytic choriomeningitis involving a 45-year old white male. Mumps accounted for 79 cases, and in the remaining 84 cases no etiologic agent was identified.

Cases of aseptic meningitis associated with mumps occurred throughout the year with a peak in March and May-June. Cases associated with ECHO and Coxsackie viruses, however, occurred largely during the summer months with a peak in August and September.

Cases associated with ECHO and Coxsackie viruses are shown in Table 5b by age group and vaccination history. Over 50% of cases had received 3 or more doses of vaccine; less than 30% were unvaccinated.

Table 5b
Aseptic Meningitis Cases
Associated with ECHO and Coxsackie Viruses
by Vaccination History and Age Group, New Jersey, 1960

Age Group	Doses of Vaccine					Total	Per cent
	OV	1-2V	3V	4+V	Unk.		
0-4	5	1	2	1	1	10	28.6
5-9	1	0	2	2	1	6	17.1
10-14	1	2	0	1	1	5	14.3
15-19	0	1	2	1	0	4	11.4
20-29	2	2	1	3	0	8	22.9
30-39	0	0	0	1	0	1	2.9
40+	0	0	0	0	1	1	2.9
TOTAL	9	6	7	9	4	35	100.0
Per* Cent Doses	29.0	19.4	22.6	29.0	--	100.0	

*Of those cases with known vaccination history

Enterovirus isolations performed by Dr. Martin Goldfield, Assistant Director, Division of Laboratories, New Jersey State Department of Health included eleven Coxsackie B-2, three B-3, four B-4, and two B-5. Most of these were isolated from scattered cases in different counties. Coxsackie B-2, however, was implicated in two Somerset County family cases and in five Morris County cases not traceably connected.

ECHO virus isolations by type included one each of ECHO 3, 4, 5, and 11, and two each of ECHO 7, 14, and 16. There were five cases associated with ECHO 6 virus, four of which occurred in a nursery outbreak in Essex County. Involved here were a 22-year old student nurse with onset in mid September, and three young infants with subsequent onsets in late September.

B. Canada

During 1960 a provisional total of 906 cases of paralytic poliomyelitis was reported to the Epidemiology Division, Canadian Department of National Health and Welfare. According to a recent Surveillance Report prepared by Dr. D. Kubryk, Medical Consultant, Epidemiology Division, final classification

with 60-day follow-up reports, similar to those used in this country, have been received for 92 percent of cases. Residual paralysis was present in 80 percent of cases.

Quebec contributed the highest provincial total, 277 cases, but the highest attack rates occurred in less populous New Brunswick and Alberta as shown in Table 5c. In contrast to the 1959 epidemic experience when poliomyelitis was concentrated largely in Quebec, in 1960, high attack rates were also evident in the western provinces of Alberta and British Columbia.

Table 5c
Paralytic Poliomyelitis
by Provinces -- Canada, 1960

<u>Province</u>	<u>Population (000's)*</u>	<u>Cases</u>	<u>Rate (per 100,000)</u>
Newfoundland	459	49	10.7
Pr. Edward Isl.	103	1	1.0
Nova Scotia	723	9	1.2
New Brunswick	600	96	16.0
Quebec	5,106	277	5.4
Ontario	6,089	39	0.6
Manitoba	899	13	1.4
Saskatchewan	910	56	6.2
Alberta	1,283	201	15.7
Br. Columbia	1,606	165	10.3
Yukon	14	-	-
NW Terr.	22	-	-
Total	17,814	906	5.1

* Estimated, 1960.

The provisional total of 906 paralytic cases is analyzed on the following page by age group and vaccination history.

Table 5d
Paralytic Poliomyelitis Cases
By Age Group, Vaccination History -- Canada, 1960

Age Group	Doses of Vaccine						Total	Percent Cases*
	0	1	2	3	4+	Unk		
0-4	196	31	31	52	6	3	319	35.4
5-9	113	12	22	71	10	3	231	25.6
10-19	94	8	6	42	7	5	162	18.0
20+	148	7	12	19	2	1	189	21.0
Unk.	-	-	-	-	-	5	5	-
Total	551	58	71	184	25	17	906	100.0
Percent Doses**	61.9	6.5	8.0	20.7	2.8	-	100.0	

* Of those with known age.

**Of those with known vaccination history.

Poliomyelitis was concentrated largely in the unvaccinated preschool age group as shown. Over 60 percent of cases were unvaccinated, and less than 25 percent had received 3 or more doses of vaccine, both figures paralleling the United States experience in 1960 (See PSU Report #223). Also similar was the age distribution with a peak in the preschool age group. This is confirmed by an analysis of age specific attack rates as presented in the following table.

Table 5e
Paralytic Poliomyelitis
Age-Specific Attack Rates--Canada, 1960

Age Group	Population (000's)	Cases	Rate (per 100,000)
0-4	2,224.6	319	14.3
5-9	2,016.6	231	11.5
10-19	3,110.1	162	5.2
20+	10,462.7	189	1.8
Unk.	-	5	-
Total	17,814.0	906	5.1

An examination of poliomyelitis fatalities demonstrates the increasing case fatality ratio with increasing age. A total of 74 poliomyelitis fatalities was reported, the majority of which were unvaccinated. The proportion of vaccinated and unvaccinated fatalities, as shown in Table 5f, bear a striking resemblance to similarly analyzed fatalities in the United States (See PSU Report #224).

Table 5f
 Poliomyelitis Fatalities
 By Age Group and Vaccination History--Canada, 1960

Age Group	Doses of Vaccine			Total	Paralytic Cases	Case Fatality Ratio
	0	1-2	3+			
0-4	15	3	4	22	319	7.0
5-9	5	2	5	12	231	5.2
10-19	11	2	0	13	162	8.0
20+	23	2	2	27	189	14.3
Unk.	-	-	-	-	5	-
Total	54	9	11	74	906	8.2
Percent Doses	72.9	12.2	14.9	100.0		

Specimens were submitted for laboratory study on 493 of the 906 total paralytic cases. Of these 493 specimens, 404 or 82 percent were positive for poliovirus. It is interesting to compare these results with Table 3A of this report. In the United States, 26 percent of the poliovirus isolations were type III, whereas in Canada 169 of the 404 poliovirus isolations (42 percent) were type III. The remaining 235 isolations (58 percent) were type I.

(This surveillance report was prepared by the Poliomyelitis and Polio-like Diseases Surveillance Unit, Joseph Oren, M.D., Chief, Michael J. Regan, M.D. and Mr. Leo Morris, Statistician, with the assistance of Statistics Section, CDC.)

Figure 1. CURRENT U.S. POLIO INCIDENCE
 compared with years 1956 through 1960

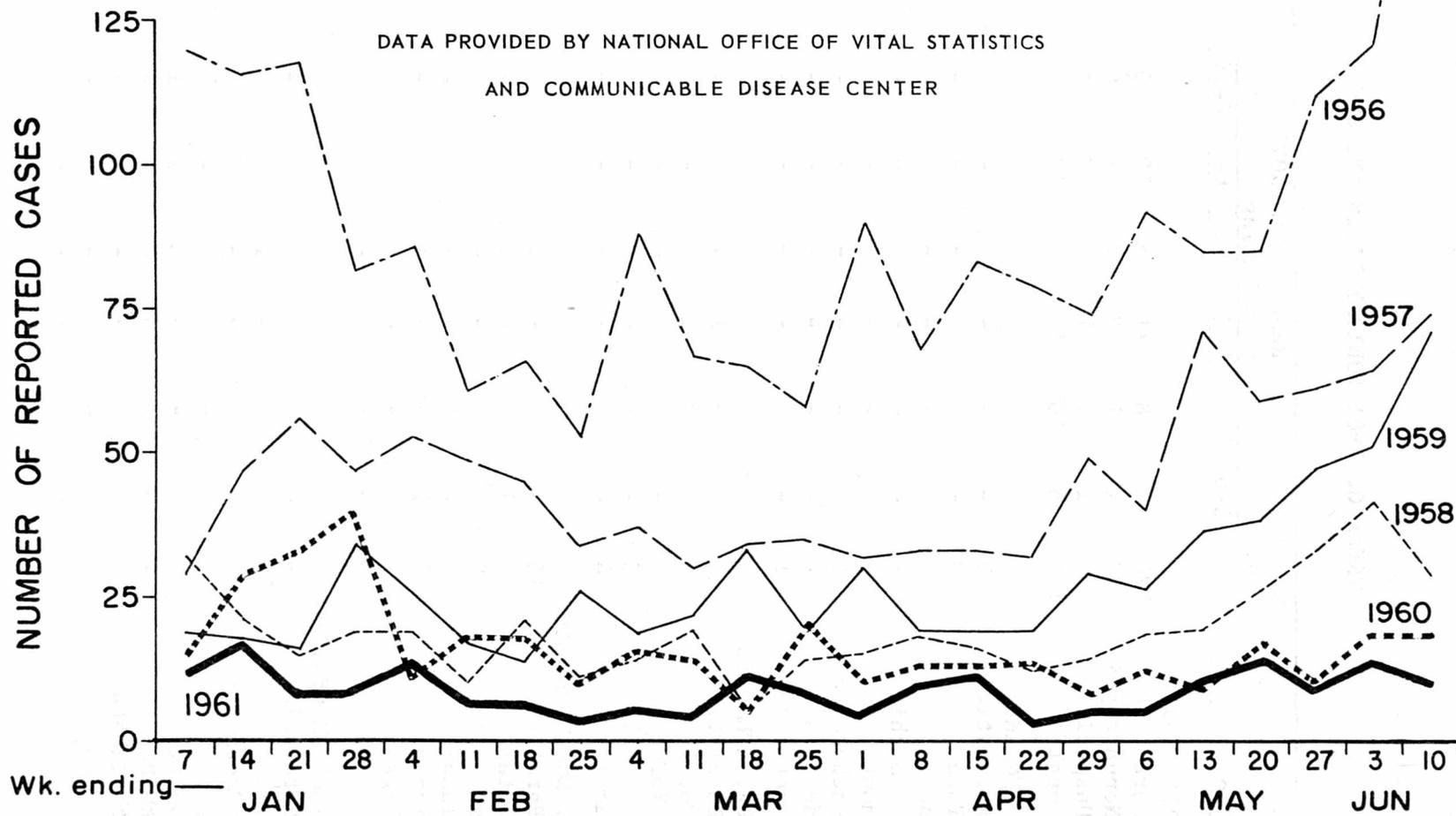


Table I

TREND OF 1961 POLIOMYELITIS INCIDENCE

State and Region	Cumulative 1961	Cases Reported to NOVS For Week Ending						Six Week Total	Comparative Six Weeks Totals in:		
		5-6	5-13	5-20	5-27	6-3	6-10		1960	1959	1958
UNITED STATES											
Paralytic	126	3	8	11	6	10	5	43	65	186	81
Nonparalytic	38	1	1	2	2	-	4	10	18	61	66
Unspecified	30	1	1	1	1	3	1	8	7	22	29
Total	194	5	10	14	9	13	10	61	90	269	176
NEW ENGLAND											
Paralytic	3	-	-	-	-	-	-	-	7	2	2
Total	3	-	-	-	-	-	-	-	7	2	2
Maine	-	-	-	-	-	-	-	-	1	-	-
New Hampshire	-	-	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-	-	-
Massachusetts	2	-	-	-	-	-	-	-	2	-	-
Rhode Island	-	-	-	-	-	-	-	-	4	2	-
Connecticut	1	-	-	-	-	-	-	-	-	-	2
MIDDLE ATLANTIC											
Paralytic	12	-	2	1	-	-	-	3	2	8	4
Total	15	-	2	1	-	-	-	3	3	11	9
New York	6	-	-	1	-	-	-	1	2	6	6
New Jersey	5	-	1	-	-	-	-	1	1	5	3
Pennsylvania	4	-	1	-	-	-	-	1	-	-	-
EAST NORTH CENTRAL											
Paralytic	15	-	-	-	2	-	-	2	4	12	3
Total	23	1	1	-	2	-	-	4	9	28	12
Ohio	8	-	-	-	-	-	-	-	4	12	2
Indiana	3	-	1	-	-	-	-	1	-	3	1
Illinois	7	1	-	-	1	-	-	2	2	2	6
Michigan	2	-	-	-	1	-	-	1	2	10	2
Wisconsin	3	-	-	-	-	-	-	-	1	1	1
WEST NORTH CENTRAL											
Paralytic	5	-	-	-	-	2	-	2	2	28	2
Total	10	-	-	-	1	3	2	6	4	40	11
Minnesota	3	-	-	-	-	2	-	2	-	5	-
Iowa	2	-	-	-	-	-	1	1	1	16	5
Missouri	3	-	-	-	1	1	1	3	2	4	-
North Dakota	-	-	-	-	-	-	-	-	-	-	1
South Dakota	-	-	-	-	-	-	-	-	-	1	-
Nebraska	2	-	-	-	-	-	-	-	-	7	5
Kansas	-	-	-	-	-	-	-	-	1	7	-

Table I (Continued)

State and Region	Cumulative 1961	Cases Reported to NOVS For Week Ending:						Six Week Total	Comparable Six Weeks Totals in:		
		5-6	5-13	5-20	5-27	6-3	6-10		1960	1959	1958
SOUTH ATLANTIC											
Paralytic	15	-	-	1	-	2	3	6	5	39	11
Total	19	-	-	1	-	2	3	6	7	48	27
Delaware	2	-	-	-	-	-	-	-	-	-	-
Maryland	-	-	-	-	-	-	-	-	-	-	-
D. C.	-	-	-	-	-	-	-	-	-	-	1
Virginia	-	-	-	-	-	-	-	-	-	10	2
West Virginia	3	-	-	-	-	-	1	1	1	5	3
North Carolina	4	-	-	1	-	-	-	1	2	4	5
South Carolina	2	-	-	-	-	-	1	1	1	1	1
Georgia	5	-	-	-	-	2	1	3	-	3	-
Florida	3	-	-	-	-	-	-	-	3	25	15
EAST SOUTH CENTRAL											
Paralytic	6	-	-	1	-	2	-	3	4	16	5
Total	18	-	1	1	-	2	-	4	5	24	16
Kentucky	14	-	1	-	-	-	-	1	1	2	4
Tennessee	1	-	-	1	-	-	-	1	1	9	5
Alabama	-	-	-	-	-	-	-	-	-	5	1
Mississippi	3	-	-	-	-	2	-	2	3	8	6
WEST SOUTH CENTRAL											
Paralytic	18	-	3	4	2	1	-	10	13	41	29
Total	33	-	3	6	3	1	3	16	22	64	55
Arkansas	1	-	-	-	-	-	-	-	-	8	2
Louisiana	7	-	1	-	1	-	-	2	9	6	1
Oklahoma	-	-	-	-	-	-	-	-	1	11	7
Texas	25	-	2	6	2	1	3	14	12	39	45
MOUNTAIN											
Paralytic	12	-	-	-	-	2	-	2	3	11	3
Total	20	-	-	1	-	2	-	3	6	16	13
Montana	1	-	-	-	-	-	-	-	5	2	2
Idaho	4	-	-	1	-	-	-	1	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-
Colorado	3	-	-	-	-	-	-	-	-	-	1
New Mexico	1	-	-	-	-	-	-	-	-	3	-
Arizona	5	-	-	-	-	2	-	2	1	11	7
Utah	6	-	-	-	-	-	-	-	-	-	2
Nevada	-	-	-	-	-	-	-	-	-	-	1
PACIFIC											
Paralytic	40	3	3	4	2	1	2	15	25	29	22
Total	53	4	3	4	3	3	2	19	27	36	31
Washington	8	-	-	3	-	2	-	5	1	-	-
Oregon	4	1	-	-	1	-	-	2	-	5	-
California	39	3	2	1	2	1	2	11	22	31	21
Alaska	-	-	-	-	-	-	-	-	2	-	1
Hawaii	2	-	1	-	-	-	-	1	2	-	9
TERRITORY											
Puerto Rico	4	-	-	-	1	-	-	1	98	-	15

Table II

THE NATIONAL FOUNDATIONMONTHLY REPORT OF POLIOMYELITIS VACCINE RELEASED AND SHIPPED

(1,000 cc's)

APRIL 1961

	<u>SINGLE ANTIGEN</u>		<u>MULTIPLE ANTIGEN</u>		<u>TOTAL</u>	
	<u>This Month</u>	<u>To Date</u>	<u>This Month</u>	<u>To Date</u>	<u>This Month</u>	<u>To Date</u>
CC. Released	3,769	481,833	244	15,244	4,013	497,077
CC. Shipped						
National Foundation	-	15,247	-	-	-	15,247
Public Agencies	2,487	170,505	54	1,079	2,541	171,584
Commercial Channels	<u>1,482</u>	<u>170,377</u>	<u>508</u>	<u>12,612</u>	<u>1,990</u>	<u>182,989</u>
Domestic Total	<u>3,969</u>	<u>340,882</u>	<u>562</u>	<u>13,691</u>	<u>4,531</u>	<u>354,573</u>
Export	1,984	104,271	24	576	2,008	104,847

FIGURE II
MONTHLY SHIPMENTS OF POLIOMYELITIS VACCINE; 1959-61

